



Department of Defense DIRECTIVE

NUMBER 5000.4

November 24, 1992

Incorporating Change 1, November 16, 1994

ASD(PA&E)

SUBJECT: Cost Analysis Improvement Group (CAIG)

- References: (a) DoD Directive 5000.4, subject as above, October 30, 1980 (hereby canceled)
- (b) [DoD 5000.4-M](#), "Cost Analysis Guidance and Procedures," December 1992
 - (c) [DoD 5025.1-M](#), "DoD Directives System Procedures," December 1990
 - (d) DoD Instruction 5000.33, "Uniform Budget/Cost Terms and Definitions," August 15, 1977 (hereby canceled)
 - (e) through (n), see enclosure 1

1. REISSUANCE AND PURPOSE

This Directive:

- 1.1. Reissues reference (a) to update the permanent charter for the OSD CAIG.
- 1.2. Authorizes the publication of reference (b), consistent with reference (c).
- 1.3. Replaces reference (d) and DoD Directive 7220.33 (reference (e)) with Chapters 3 and 4 of reference (b).

2. APPLICABILITY

This Directive applies to the Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff and the Joint Staff, and the Defense Agencies (hereafter referred to collectively as "the DoD Components").

3. ADMINISTRATION

3.1. The Chair. In accordance with DoD Instruction 5000.2 and DoD Directive 5000.49 (references (f) and (g)), the OSD CAIG is chaired by the Deputy Assistant Secretary of Defense (Resource Analysis) in the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation).

3.2. Direction. The OSD CAIG is responsible to, and subject to direction from, the Under Secretary of Defense (Acquisition) (USD(A)) for fulfilling the requirements imposed on the Department of Defense by 10 U.S.C. 2434 (reference (h)), and for providing support to the Defense Acquisition Board (DAB).

3.3. Membership. The CAIG membership is composed of the following:

3.3.1. One member appointed by each DAB permanent member (reference (g)). The Chair shall be in addition to those CAIG members.

3.3.2. One member appointed by the Assistant Secretary (Force Management and Personnel).

3.3.3. Ad hoc representatives, as appointed by the CAIG Chair, for special purposes.

3.4. Executive Group. The Executive Group is made up of the CAIG Chair, the representatives from the OSD, and the representative of the Vice Chairman of the Joint Chiefs of Staff, appointed in accordance with paragraph 3.3., above. Only the Executive Group shall participate in preparing the CAIG reports.

3.5. CAIG Meetings. Regular and Executive Group meetings shall take place at the call of the CAIG Chair. Quarterly, an administrative CAIG meeting shall be held with the full CAIG membership.

4. RESPONSIBILITIES

The Assistant Secretary of Defense (Program Analysis and Evaluation) shall ensure that the OSD CAIG shall act as the principal advisory body to the milestone decision authority on cost, as delineated in DoD Instruction 5000.2, DoD Directive 5000.1, and DoD 5000.2-M (references (f), (i), and (j)). CAIG members shall represent their functional areas, in accordance with the standing organizational roles and missions of their offices, for the following:

4.1. Implementation of 10 U.S.C. 2434 (reference (h)) and DoD Instruction 5000.2 (reference (f))

4.1.1. For Milestone II and III Reviews. As required by reference (h), the CAIG Chair shall give the USD(A) a report on the life-cycle costs of each Category ID program at Milestones II and III. Those reports shall transmit the CAIG estimate of that program's life-cycle costs. At a Milestone II or III review for a Category IC program, the CAIG Chair shall provide a similar report to the official to whom the USD(A) has delegated milestone approval authority.

4.1.2. Scope of the CAIG Estimate. The CAIG estimate supporting a Milestone II or III decision shall cover all elements of the total life-cycle costs of the program (not just Future Years Defense Program requirements), as defined in Chapter 2 of DoD 5000.4-M (reference (b)), and Part 15 of DoD 5000.2-M (reference (j)), including the following, as required by reference (h):

"(A) the cost of all research and development efforts, without regard to funding source or management control;

"(B) the cost of the prime hardware and its major subcomponents, support costs (including training, peculiar support equipment, and data), initial spares, military construction costs, and the cost of all related procurements (including, where applicable, modifications to existing aircraft or ship platforms), without regard to funding source or management control of the program; and

"(C) all elements of operating and support costs."

The CAIG estimate shall display values separately for each of the elements of life-cycle cost quoted in (A) through (C), above.

4.1.3. For Other Reviews. The CAIG Chair shall give the USD(A) a report on the life-cycle costs of each Category ID program at Milestone I of the same scope described in subparagraph 4.1.2., above. When the USD(A) determines that a Milestone

IV review may result in the engineering and manufacturing development (EMD), or in the production and fielding, of a Category I program, the CAIG Chair shall provide a similar report for that Milestone IV review, as follows:

4.1.3.1. For a Category ID program, that report shall be given to the USD(A).

4.1.3.2. For a Category IC program, that report shall be provided to the official to whom the USD(A) has delegated milestone approval authority.

4.1.3.3. The USD(A), in coordination with the CAIG Chair, shall determine the requirements for CAIG reports in support of DAB reviews that are not milestone reviews.

4.1.4. For Defense Agencies and Joint DoD Component Programs. The CAIG Chair shall prepare a report for the USD(A) on the life-cycle costs of Defense Agency or joint DoD Component programs, in accordance with subparagraphs 4.1.1. through 4.1.3., above. A DoD Component cost analysis (CCA) will not always be required for programs of the Defense Agencies, or for the joint DoD Component programs.

4.1.4.1. For programs sponsored by a Defense Agency that the CAIG Chair determines to have the capability of generating a DoD CCA, that Defense Agency shall provide a DoD CCA, in accordance with DoD 5000.4-M, DoD Instruction 5000.2, and DoD 5000.2-M (references (b), (f), and (j)).

4.1.4.2. For a joint DoD Component program that involves at least one Military Department, or at least one Defense Agency that the CAIG Chair determines to have the capability of generating a DoD CCA, the USD(A), based on the recommendation of the CAIG Chair, shall designate the organization that is to prepare the DoD CCA, in accordance with references (b), (f), and (j). The CAIG Chair shall coordinate those designations with the performing organization's DoD Component.

4.1.4.3. For programs sponsored by one or more Defense Agencies that the CAIG Chair determines do not have the capability of generating the DoD CCA, the OSD CAIG shall prepare the required life-cycle report for the USD(A) without a DoD CCA from the sponsoring Defense Agency or Agencies. In such a case, the CAIG Chair may task the sponsoring Defense Agency or Agencies to provide information and manpower to support the preparation of the CAIG life-cycle cost report, and the CAIG Chair may establish and direct a task force involving cost analysts from the DoD Components, other than the sponsoring Defense Agency or Agencies, to support the preparation of the CAIG life-cycle cost report. The CAIG Chair shall coordinate assignments to such a task force with the participants' DoD Components.

4.1.4.4. Whether or not the sponsoring Defense Agency or Agencies provide a DoD CCA, the CAIG is responsible for the overall quality of the estimates presented to the USD(A), and for the estimates of the elements of life-cycle cost identified in subparagraph 4.1.2., above.

4.1.5. Deficiencies In Submitted Information. The CAIG Chair shall advise the USD(A) whether cost estimating deficiencies in the DoD Component program office or cost analysis office estimates or the lack of DoD Component estimate documentation is so significant that the milestone or program review should be deferred, as required by DoD Instruction 5000.2 (reference (f)), and in compliance with the IG, DoD, Audit Report No. 89-055 (reference (k)). The documentation standard in Chapter 2, paragraph C2.4.3. of DoD 5000.4-M (reference (b)), shall be the basis for the CAIG recommendation to defer the milestone and program review.

4.1.6. Bases for the CAIG Estimate. The CAIG estimate shall be for the program described in the cost analysis requirements description (CARD) provided by the sponsoring DoD Component, in accordance with references (b) and (f), and DoD 5000.2-M (reference (j)). In developing its estimate, the CAIG also shall examine the mutual consistency of the CARD with current threat, operational requirements, and technical requirements documents; and with contractual documents, including requests for proposals. The CAIG shall report any instances of significant inconsistencies among those documents, and shall provide in its report an assessment of the potential implications for cost of the inconsistencies. The OSD CAIG shall review each of the program and estimating assumptions listed in Chapter 2, subparagraphs C2.1.1.1. through C2.1.1.5. of reference (b), and provide its opinion of their validity in its report. Responsibilities for best-practice solutions to the technical design problems and acquisition strategy issues involved rest with the sponsoring DoD Components, and with other OSD offices, in accordance with their functional responsibilities.

4.1.7. Relation of the CAIG Estimate to Program Office and the DoD CCA.

In preparing its estimate, the CAIG shall employ the best current professional practice for that task. The CAIG may incorporate in its estimate, with or without adjustment, specific portions of the program office cost estimate (POE) or the DoD CCA estimate, if it has independently established that the portions included are valid.

4.1.7.1. The decision to incorporate parts of the POE or the DoD CCA shall be based on such evidence, as follows:

4.1.7.1.1. Current prices or realized costs;

4.1.7.1.2. Cost incurred on similar programs; or

4.1.7.1.3. A verification based on experience that the methods and data used in constructing the portion accepted are reasonable.

4.1.7.2. The CAIG shall document the reasons for incorporation in its estimate of any portion of the POE and the DoD CCA. That documentation may be maintained separately from the CAIG report.

4.1.8. Risk Assessment. The CAIG Chair report, in support of a milestone review, shall include quantitative assessments of the risk in the estimate of life-cycle costs. In developing an assessment of cost risk, the CAIG shall consider the validity of such programmatic assumptions of the CARDS as EMD schedules, rates of utilization of test assets, production ramp rates, and buy rates, consistent with historical information. The CAIG shall also consider uncertainties in inputs to any cost estimating relationships used in its estimates, as well as the uncertainties inherent in the calibration of the CERs, and shall consider uncertainties in the factors used in making any estimates by analogy. The CAIG shall consider cost and schedule risk implications of available assessments of the program's technical risks, and may include the results in its cost-risk assessments. The CAIG may consider information on risk provided by any source, although primary reliance will be on the technical risk assessments that are the responsibility of the sponsoring DoD Components, and of other OSD offices, in accordance with their functional responsibilities.

4.1.9. Significant DAB Issues. The CAIG Chair report to the USD(A) shall provide an analysis of cost implications of significant DAB issues; e.g., costs of proposed coproduction in multinational programs, costs of alternative acquisition strategies, and costs of competitive alternative sources for the development and production phases, as required by DoD 5000.2-M (reference (j)).

4.2. Other CAIG Responsibilities

4.2.1. Provide the DAB with an independent analysis of cost implications of proposed coproduction and dual production approaches to weapons procurement in support of North Atlantic Treaty Organization standardization and interoperability, as required by DoD Directive 2010.6 (reference (l)).

4.2.2. Provide the USD(A) with a recommendation on the reasonableness of the program acquisition unit cost and current procurement unit cost in support of the Secretary of Defense certifications to the Congress for programs breaching established unit cost thresholds, as required by Part 18 of DoD 5000.2-M (reference (j)).

4.2.3. Provide the USD(A) with a recommendation on the validity of costs in acquisition program baselines in compliance with Part 14 of reference (j).

4.2.4. Provide an independent assessment of the status of the Defense Acquisition Executive Summary program costs, as required by Part 16 of reference (j).

4.2.5. Establish substantive guidance on the preparation of cost estimates and detailed procedural guidance on CAIG presentations. (See DoD 5000.4-M, reference (b)), as required by DoD Instruction 5000.2, Part 10, subparagraph 1.3.4. (reference (f)).)

4.2.6. The CAIG shall annually review the plans of all the DoD Components for performing or sponsoring cost research, and develop a coordinated 6-year plan for DoD cost research that allocates resources to the highest priority and avoids duplication of effort and facilitates sharing results among the DoD Components. The CAIG shall make available to all interested DoD Components a database describing completed, on-going, and planned cost research projects.

4.2.7. Establish standard definitions of cost terms in the management of DoD acquisition programs to provide a foundation for communication among the Congress, the Department of Defense, and industry (Part 6, section 2. of reference (f), and reference (b)), in compliance with the USD(A) report approved by the Secretary of Defense on January 16, 1990 (reference (m)).

4.2.8. Establish policy guidance on the Contractor Cost Data Reporting System, and monitor its implementation to ensure consistent and appropriate application throughout the Department of Defense, as required by DoD 5000.2-M, Part 20, paragraph 3.a. (reference (j)).

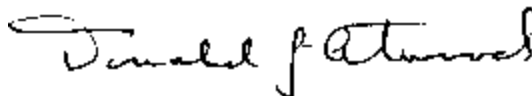
4.2.9. Develop and implement policy to provide for the collection, storage, and exchange of information about improved cost estimating procedures, methodology, and data, among the OSD staffs, the DoD Components, and the outside organizations. Sponsor an annual DoD cost analysis symposium to facilitate the exchange of information, and to disseminate details on cost policy and research.

4.2.10. Establish policy for, and administer, the Visibility and Management of Operating and Support Costs Program, commonly referred to as the "VAMOSOC," and establish policy for the development and maintenance of a historical operating and support (O&S) cost data collection system (see DoD 5000.4-M, reference (b)), in compliance with the USD(A) report (reference (m)). The O&S costs incurred by each defense program shall be maintained in that data base.

4.2.11. Review and provide written approval for the DoD Components to contract for the development, or assistance in the development of, DoD CCA estimates, in compliance with the IG, DoD, Audit Report No. 92-OIG-01 (reference (n)). The DoD Component requests must demonstrate that special circumstances require use of contractor personnel, rather than organic personnel, and that, in conformance with existing DoD policy, there are adequate safeguards to preclude conflicts of interest.

| 5. EFFECTIVE *DATE*

| This Directive is effective *immediately*.



Donald J. Atwood
Deputy Secretary of Defense

Enclosures - 1

E1. References, continued

E1. ENCLOSURE 1

REFERENCES, continued

- (e) DoD Directive 7220.33, "Reporting of Operating and Support Costs of Major Defense Systems," May 19, 1984 (hereby canceled)
- (f) [DoD Instruction 5000.2](#), "Defense Acquisition Management Policies and Procedures," February 23, 1991
- (g) DoD Directive 5000.49, "Defense Acquisition Board," September 11, 1989
- (h) Section 2434 of title 10, United States Code
- (i) [DoD Directive 5000.1](#), "Defense Acquisition," February 23, 1991
- (j) DoD 5000.2-M, "Defense Acquisition Management Documentation and Reports," February 1991
- (k) Inspector General of the Department of Defense, Audit Report No. 89-055, "Independent Cost Estimating for Major Systems," February 24, 1989
- (l) [DoD Directive 2010.6](#), "Standardization and Interoperability of Weapons Systems and Equipment within the North Atlantic Treaty Organization," March 5, 1980
- (m) Under Secretary of Defense (Acquisition) Report, "Joint OSD-DoD Component Regulatory Relief Task Force Report," January 1990
- (n) Inspector General of the Department of Defense, Audit Report No. 92-OIG-01, "Independent Cost Estimating for Major Systems," February 5, 1992